

**Notice of Allowability**

Application No.

09/611,846

Applicant(s)

INOUE ET AL.

Examiner

Art Unit

Thoi V. Duong

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-- ☒

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed January 27, 2006.
2. ☒ The allowed claim(s) is/are 1.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to the Amendment filed January 27, 2006.  
Currently, claim 1 is pending in this application.

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

In the title: change the title as "Liquid crystal display comprising a linear protrusion structure and an auxiliary protrusion structure having a width wider than that of the linear protrusion structure for controlling an alignment of liquid crystal."

### ***Allowable Subject Matter***

3. Claim 1 is allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed.

Specifically, none of the prior art of record discloses, in combination with other limitations as claimed, a liquid crystal display comprising:

- a first substrate having a first electrode;
- a second substrate having a second electrode corresponding to a pixel;
- liquid crystal having negative dielectric anisotropy sealed between the first and the second substrates; and

a structure which is provided on at least the first substrate to control an alignment of the liquid crystal;

wherein the structure on the first substrate has a linear protrusion structure, an auxiliary protrusion structure extending from the protrusion structure and opposing to each of facing end portions of the second electrode, and a width of the auxiliary protrusion structure wider than a width of the protrusion structure..

The most relevant reference, US 6,567,144 B1 to Kim et al. (Kim), fails to disclose or suggest a width of the auxiliary protrusion structure wider than a width of the protrusion structure. As shown in Figs. 6-8, Kim discloses a liquid crystal display comprising:

a first substrate 100 having a first electrode 10 (common electrode);

a second substrate 200 having a second electrode 20 (pixel electrode)

corresponding to a pixel;

liquid crystal having negative dielectric anisotropy sealed between the first and the second substrates; and

a structure 17/171 (protrusions) which is provided on at least the first substrate 100 to control an alignment of the liquid crystal;

wherein the structure on the first substrate has a linear protrusion structure 17, an auxiliary protrusion structure 171 extending from the protrusion structure 17 and opposing to each of facing end portions of the second electrode 20.

However, Kim only discloses that the width of the linear protrusion structure 17 is preferably in the range of 3 to 20 micrometers and the width of the auxiliary protrusion

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structure 171 may gradually decrease from the point connected to the linear protrusion structure 171 until the end of the auxiliary protrusion structure 171 (col. 5, lines 34-36 and col. 7, lines 39-47). Kim does not suggest that a width of the auxiliary protrusion structure 17 is wider than a width of the protrusion structure 171.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

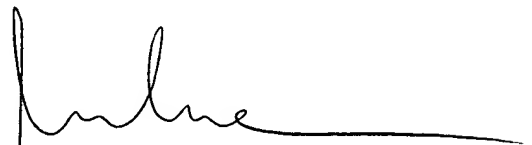
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



04/05/2006



DUNG T. NGUYEN  
PRIMARY EXAMINER